



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : **Confirmation No. 6831**
Hidekazu TANAKA et al. : Attorney Docket No. 2002_0405A
Serial No. 10/089,884 : Group Art Unit 2615
Filed July 10, 2002 : Examiner Douglas J. Suthers
LOUDSPEAKER DEVICE : **Mail Stop: AF**

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is a pre-appeal brief request for review of the rejection of claims 1, 3 and 4 as set forth in the final Office Action dated February 24, 2006. No amendments are being filed with this request. This request is being filed concurrently with a Notice of Appeal and a petition for a two month extension of time. The request for review of the rejection is based on the following:

I. Claim Rejections under 35 U.S.C. § 103(a)

A. The Examiner has rejected claim 1 under 35 U.S.C. §103(a) as being unpatentable over Konno et al. (U.S. 6,122,385) in view of Matsushita (JP 7-16299).

Claim 1 recites the feature of a negative feedback circuit that is formed by connecting an acoustic output signal of a microphone amplifier to a subtracter and at the same time by connecting the acoustic output signal of the microphone amplifier to the subtracter via a high-pass filter. Appellants respectfully submit that the combination of Konno and Matsushita does not teach or suggest at least this feature of claim 1.

Regarding Konno, Appellants note that this reference discloses a sound reproduction apparatus having a subtracter 10, a power amplifier 11, a speaker 13, a microphone 14, a microphone amplifier 15, a filter 16 and an adder 17 (see Fig. 1).

As shown in Fig. 1 of Konno, the output of the microphone amplifier 15 is input to the filter 16, and the output of filter 16 is input to the adder 17 (see col. 3, lines 52-57). As also shown in Fig. 1, the output of the subtracter 10 is directly input to the adder 17 (see col. 3, lines 58-60). As explained in Konno, a negative feedback circuit is formed by inputting the output signal of adder 17 into the negative terminal of the subtracter 10 (see col. 3, lines 60-62).

Thus, in Konno, the negative feedback circuit is formed by connecting (1) an output signal delivered from the subtracter 10 to the negative terminal of the subtracter 10 via the adder 17 and by connecting (2) an output signal delivered from the microphone amplifier 15 and passed through the high-pass filter 16 to the negative terminal of the subtracter 10 via the adder 17.

As such, Appellants respectfully submit that Konno does not disclose a negative feedback circuit that is formed by connecting (1) an acoustic output signal of the microphone amplifier to a subtracter and at the same time by connecting (2) the acoustic output signal of the microphone amplifier to the subtracter via a high-pass filter, as recited in claim 1. In contrast, as described above, Konno describes that the negative feedback circuit is formed by connecting (1) an output signal delivered from the subtracter 10 to the negative terminal of the subtracter 10 via the adder 17 and by connecting (2) an output signal delivered from the microphone amplifier 15 and passed through the high-pass filter 16 to the negative terminal of the subtracter 10 via the adder 17.

Regarding the Matsushita reference, Appellants respectfully submit that this reference does not cure the above-noted deficiencies of Konno. In this regard, it is noted that Matsushita was relied on in the Office Action solely for the teaching of an acoustic pipe.

In view of the foregoing, Appellants respectfully submit that the cited prior art references do not disclose, suggest or otherwise render obvious the above-noted feature recited in claim 1. Accordingly, Appellants submit that claim 1 is patentable over the cited prior art, an indication of which is kindly requested.

Furthermore, Appellants note that claim 1 also recites that a cutoff frequency of the high-pass filter is matched with a resonance frequency of the acoustic pipe.

Regarding Konno, Appellants note that this reference discloses that a cutoff frequency of the high-pass filter 16 is matched with the lowest resonance frequency of the speaker 13 (see col. 4, lines 47-49). The Examiner recognizes that Konno does not disclose the use of an acoustic pipe, and as noted above, has relied on Matsushita for the teaching of an acoustic pipe 2, and has taken the position that it would have been obvious to provide the acoustic pipe 2 of Matsushita within the sound reproduction apparatus of Konno (see Office Action at page 4).

In the final Office Action, the Examiner has taken the position that "Konno teaches a cutoff frequency matching a resonant frequency of the received signal regardless of the structure" (see item 8 on page 7 of the final Office Action). Appellants disagree with the Examiner's position.

As noted above, Konno explicitly indicates that the cutoff frequency of the high-pass filter 16 is matched with the lowest resonance frequency of the speaker 13, and in no way whatsoever discloses that the cutoff frequency of the high pass filter 16 is matched with the received signal regardless of structure. In this regard, Appellants note that the resonance frequency of an acoustic pipe is quite different than the lowest resonance frequency of the speaker 13 which varies according to the dimensions of the speaker 13.

Thus, as noted above, Appellants respectfully submit that even if Matsushita was combined with Konno, that the resulting combination would not suggest to one of ordinary skill in the art that the cutoff frequency of the high-pass filter should be matched with a resonance frequency of an acoustic pipe. In view of the foregoing, Appellants respectfully submit that claim 1 is patentable over the cited prior art, an indication of which is kindly requested.

B. The Examiner has rejected claims 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Konno et al. (U.S. 6,122,385) in view of Meyers (U.S. 3,798,374) and Matsushita (JP 7-16299).

Regarding claims 3 and 4, Appellants note that claim 3 recites that a negative feedback circuit is formed by connecting an acoustic output signal of a microphone amplifier to a subtracter via a -6dB/oct. high-pass filter and a -12 dB/oct. high-pass filter connected in parallel, and that claim 4 recites that a negative feedback circuit is formed by connecting an acoustic output signal of a microphone amplifier to a subtracter via a -12dB/oct. high-pass filter connected in parallel with one of a -6dB/oct. low-pas filter and a -12 dB/oct. low-pass filter.

Regarding Konno, as discussed above, this reference describes that a negative feedback circuit is formed by connecting (1) an output signal delivered from the subtracter 10 to the negative terminal of the subtracter 10 via the adder 17 and by connecting (2) an output signal delivered from the microphone amplifier 15 and passed through the high-pass filter 16 to the negative terminal of the subtracter 10 via the adder 17.

Thus, for at least similar reasons as discussed above with respect to claim 1, Appellants respectfully submit that Konno does not disclose the feature of a negative feedback circuit which is formed by connecting an acoustic output signal of a microphone amplifier to a subtracter via a -6dB/oct. high-pass filter and a -12 dB/oct. high-pass filter connected in parallel, as recited in claim 3, and the feature of a negative feedback circuit which is formed by connecting an acoustic output signal of a microphone amplifier to a subtracter via a -12dB/oct. high-pass filter connected in parallel with one of a -6dB/oct. low-pas filter and a -12 dB/oct. low-pass filter, as recited in claim 4.

In addition, regarding the Meyers reference, Appellants note that the Examiner has relied on this reference for the teaching of an equalizer 70. As explained in Meyers, the equalizer 70 is formed of capacitors C73, C74 and resistors R71 and R72 (see Fig. 1 and col. 4, lines 54-62). Thus, it is the combination of these four elements (i.e., C73, C74, R71 and R72) that functions as an equalizer.

In the final Office Action, the Examiner asserts that an equalizer generally comprises multiple filters (see final Office Action at page 8). Appellants disagree and point out to the Examiner that it is well known in the art that an equalizer is composed of a combination of electronic elements, such as coils, capacitors and resistors, wherein the combination of electronic

elements functions as a filter. Thus, contrary to the position of the Examiner, an equalizer does not generally comprise multiple filters.

In view of the foregoing, Appellants respectfully submit that the combination of references cited by the Examiner does not teach, suggest or otherwise renders obvious the above-noted features recited in claims 3 and 4.

Further, Appellants note that claims 3 and 4 also recite that a cutoff frequency of the -12 dB/oct high-pass filter is matched with a resonance frequency of the acoustic pipe. For at least similar reasons as discussed above with respect to claim 1, Appellants submit that the combination of Konno and Matsushita does not teach, suggest or otherwise render obvious such a feature. In addition, Appellants submit that Meyers does not cure this deficiency of Konno and Matsushita.

In view of the foregoing, Appellants respectfully submit that claims 3 and 4 are patentable over the cited prior art, an indication of which is kindly requested.

II. Conclusion

In view of the foregoing, Appellants respectfully submit that independent claims 1, 3 and 4 are patentable over the prior art references cited by the Examiner. Accordingly, reconsideration of the rejections set forth in the Final Office Action is respectfully requested.

Respectfully submitted,

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